UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,438	08/08/2003	Adrian P. Stephens	1000-0023	3641

7590 04/09/2007	EXAMINER
The Law Offices of John C. Scott, LLC c/o PortfolioIP P.O.Box 52050 Minneapolis, MN 55402	FAROUL, FARAH

ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

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	Application No.	Applicant(s)
Office Action Summary	10/637,438	STEPHENS ET AL.
	Examiner	Art Unit
	Farah Faroul	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *See Continuation Sheet*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8/8/2003, 2/7/2005 and 4/8/2005.

DETAILED ACTION

1.   The following Office Action is based on the US application filed on August 8,

2003 having claims 1-29 and Figures 1-6.

Information Disclosure Statement

2.   The information disclosure statement filed on February 8, 2005 fails to comply

with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent

document; each non-patent literature publication or that portion which caused it to be

listed; and all other information or that portion which caused it to be listed. It has been

placed in the application file, but the information referred to therein has not been

considered.

Applicant failed to provide a translated copy in English of the abstract of the

foreign documents DE-10154644 and DE-10154935. Subsequently, the information

referred therein has not been considered.

Drawings

3.   The drawings are objected to because Figures 1-2 and 4-5 lack a descriptive

legend of acronyms SIFS, RTS, TCTS, Ack, T and Dav. Corrected drawing sheets in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet, even if

only one figure is being amended. The figure or figure number of an amended drawing

should not be labeled as "amended." If a drawing figure is to be canceled, the

appropriate figure must be removed from the replacement sheet, and where necessary,

the remaining figures must be renumbered and appropriate changes made to the brief

description of the several views of the drawings for consistency. Additional replacement

sheets may be necessary to show the renumbering of the remaining figures. Each

drawing sheet submitted after the filing date of an application must be labeled in the top

margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the

drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s),

applicant is required to submit a marked-up copy of each Replacement Sheet including

annotations indicating the changes made to the previous version. The marked-up copy

must be clearly labeled as "Annotated Sheets" and must be presented in the

amendment or remarks section that explains the change(s) to the drawings. See 37

CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy

will result in the abandonment of the application.

Specification

4.   The abstract of the disclosure is objected to because the abstract is too short in

length to provide a brief, clear and concise description of applicant's invention.

Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the

disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "said," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

Claim Objections

5.   Claims 5-6, 11-12, and 15-18 are objected to because of the following

informalities:

In Claims 5, the acronyms RTS/SIFS/TCTS in line 9 and

RTS/SIFS/TCTS/Data/Ack in line 10 need to be changed to Request To Send (RTS),

Short Interface Space (SIFS), Training Clear-To-Send Frame (TCTS), and

Acknowledgement (Ack) in all lines of the claim. Same correction is required for

acronyms PER and BER.

In claim 6, it is suggested that applicant writes the word "DATA" in lower case

letters if the word is not referring to either an acronym or a trademark.

In claim 6, the acronym TACK needs to be changed to Training

Acknowledgement frame (TACK). Same correction is required for the acronyms PER

and BER.

In claims 11-12 and 15-18, the letter "T" found in several lines of these claims

needs to be replaced with "time T" in all lines where T is mentioned to make the claims

positive.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 8-13, 15, 17-24, 26-27, and 29 are rejected under 35 U.S.C. 112,

second paragraph, as being indefinite for failing to particularly point out and distinctly

claim the subject matter which applicant regards as the invention.

Claims 1-6, 8-13, 15, 17-24, 26-27, and 29 recite the limitation "prefix adaptation"

and "postfix adaptation" in several lines of the above claims. The terms "prefix

adaptation" and "postfix adaptation" are not well known in the art. Thus, applicant must

clearly define these terms within the claims or delete the terms.

Claim 29 recites the limitation "the data transfer" in lines 4 and 5. There is

insufficient antecedent basis for this limitation in the claim. It is suggested that applicant

changes the limitation to "the subsequent data transfer" as recited in claim 27 from

which claim 29 depends on.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

Note: The limitations "postfix adaptation" and "prefix adaptation" are not well known in
the art. However, the prior art provided teaches the methods of these limitations as
defined in applicant's disclosure.

Claims 1, 3-19, 21-25, and 27-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hui (EP 1 137 217 A1) in view of Soomro et al. (US 2003/0022686

A1) (both references disclosed by applicant).

For claims 1, 19, 24 and 27, Hui discloses estimating throughput for a

subsequent data transfer using prefix adaptation (paragraph 20, lines 1-5 wherein

adaptation information is delivered before transmission of data packets (i.e. prefix

adaptation) and paragraph 19, lines 1-8 showing throughput estimation procedure);

Selecting an adaptation technique for use in the subsequent data transfer based

on estimated throughput and transferring data using the selected adaptation technique

(paragraph 4, line 1 to paragraph 6, line 9, wherein a transmission mode is selected and used to transfer data).

For claims 1, 19, 24 and 27, Hui discloses the entire claimed invention except estimating the throughput using postfix adaptation.

Soomro, from the same or similar field of endeavor, discloses sending a data frame to a receiving station, and then calculating and sending throughput information for subsequent data transfer (i.e. postfix adaptation) (figure 4, elements 100, 120 and 130).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the adaptation selection technique of Hui with the postfix adaptation method of Soomro at the time of the invention. The postfix adaptation method of Soomro can be implemented into the communication network of Hui by estimating postfix adaptation before selecting the transmission mode to use in the subsequent data transfer. The motivation to combine the adaptation selecting technique of Hui with the postfix adaptation method of Soomro is that it provides efficient data transfer mechanism with maximal throughput.

For claims 3 and 21, Hui discloses estimating the throughput includes the estimating the throughput of a prefix adaptation frame exchange (throughput information is estimated and sent using data frame exchange between sending and receiving ends, paragraph 4, lines 1-5).

For claims 4 and 22, Hui discloses the entire claimed invention except estimating the throughput includes estimating the throughput of a postfix adaptation frame exchange.

Soomro, from the same or similar field of endeavor, discloses sending a data frame to a receiving station, and then calculating and sending throughput information for subsequent data transfer (i.e. postfix adaptation) (see frame exchange in figure 4, elements 100, 120 and 130).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the adaptation selection technique of Hui with the postfix adaptation method of Soomro at the time of the invention. The postfix adaptation method of Soomro can be implemented into the communication network of Hui by estimating postfix adaptation before selecting the transmission mode to use in the subsequent data transfer. The motivation to combine the adaptation selecting technique of Hui with the postfix adaptation method of Soomro is that it provides efficient data transfer mechanism with maximal throughput.

For claims 5 and 6, Hui discloses estimating the throughout by evaluating an equation where Tprefix is the estimated throughput, Pcollision is the probability that collision occurs, Li is the length of the ith packet of data that will be transmitted, Drts is the duration of a channel access sequence and PER is the probability that a packet of length Li will be received correctly.

Hui discloses calculating throughput for each transmission mode (i.e. postfix or prefix) using an equation wherein L is the length of a frame to be transmitted, PER is the probability that the frame will be transmitted correctly (paragraph 21, line 1 to paragraph 24, line 2, and equation 2).

For claims 7, 25 and 28, Hui discloses selecting an adaptation technique for use in the subsequent data transfer having a higher throughput (paragraph 5, lines 1-4 wherein the transmission mode with maximal throughput is selected).

For claims 8-10 and 23 Hui discloses estimating the throughput includes evaluating a number of parameter combinations, evaluating a number of combinations of fragmentation threshold, modulation type, and prefix adaptation (paragraph 6, lines 1-9 and table 1 wherein estimating the throughput involves link quality measurements, e.g. carrier to interference ratio (C/I) ratio).

For claims 11-12 and 14, Hui discloses determining an adaptation validity duration as an estimate of the useful life of adaptation information, determining an adaptation validity duration includes monitoring variation of adaptation parameters as a function of time (paragraph 20, lines 45-58 wherein adaptation validity duration is based on evaluating parameters as a function of time).

For claims 11-12 and 14, Hui discloses the entire claimed invention except when data is to be transferred, determining a time T since adaptation information was last obtained and when T is greater than the adaptation validity duration, or when T is less than the adaptation validity duration to choose between post or prefix adaptation.

Soomro, from the same or similar field of endeavor, discloses determining the last time a frame was obtained by the receiving end and comparing to the current time when the frame is to be transmitted and the duration of the transmission (paragraph 22, lines 16-22).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the adaptation selection technique of Hui with the postfix adaptation method of Soomro at the time of the invention. The postfix adaptation method of Soomro can be implemented into the communication network of Hui by estimating postfix adaptation before selecting the transmission mode to use in the subsequent data transfer and comparing the time the last adaptation information received with the adaptation validity duration of Hui. The motivation to combine the adaptation selecting technique of Hui with the postfix adaptation method of Soomro is that it provides efficient data transfer mechanism with maximal throughput.

For claim 13, Hui discloses estimating throughput for the subsequent data transfer using prefix adaptation, selecting an adaptation technique having a higher estimated throughput (paragraph 5, lines 1-4 wherein the transmission mode with maximal throughput is selected).

Soomro, from the same or similar field of endeavor, discloses sending a data frame to a receiving station, and then calculating and sending throughput information for subsequent data transfer (i.e. postfix adaptation) (figure 4, elements 100, 120 and 130).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the adaptation selection technique of Hui with the postfix adaptation method of Soomro at the time of the invention. The postfix adaptation method of Soomro can be implemented into the communication network of Hui by estimating postfix adaptation before selecting the transmission mode to use in the subsequent data transfer. The motivation to combine the adaptation selecting technique of Hui with the postfix

adaptation method of Soomro is that it provides efficient data transfer mechanism with maximal throughput.

For claims 15 and 16, Hui discloses estimating throughput for a subsequent data transfer using prefix adaptation, selecting an adaptation technique to be used for the subsequent data transfer based on estimated throughput, transferring data using the selected adaptation technique (paragraph 4, line 1 to paragraph 6, line 9, wherein a transmission mode is selected and used to transfer data).

For claims 15 and 16, Hui discloses the entire claimed invention except estimating throughput for the subsequent data transfer using postfix adaptation and the postfix data transmission rate.

Soomro, from the same or similar field of endeavor, discloses sending a data frame to a receiving station, and then calculating and sending throughput information for subsequent data transfer (i.e. postfix adaptation) (figure 4, elements 100, 120 and 130).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the adaptation selection technique of Hui with the postfix adaptation method of Soomro at the time of the invention. The postfix adaptation method of Soomro can be implemented into the communication network of Hui by estimating postfix adaptation before selecting the transmission mode to use in the subsequent data transfer. The motivation to combine the adaptation selecting technique of Hui with the postfix adaptation method of Soomro is that it provides efficient data transfer mechanism with maximal throughput.

For claim 17, Soomro discloses determining a postfix data transmission rate includes choosing a first data transmission rate if T exceeds a threshold value and choosing a second data transmission rate if T does not exceed the threshold value (paragraph 17, lines 1-30).

For claims 18, Hui discloses determining a postfix data transmission rate includes evaluating an equation that is a function of T (paragraph 20, lines 45-50).

8.   Claims 2, 20, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hui and Soomro as applied to claims 1, 19, 24 and 27 above, and further in view of Stolyar et al. (US 2004/0266451 A1).

For claims 2, 20, 26 and 29, Hui and Soomro disclose the entire claimed invention except for estimating the throughput includes dividing an amount of data expected to be successfully transferred during a data transfer by an expected total duration of the data transfer.

Stolyar, from the same or similar field of endeavor, teaches a method in which throughput is calculated by dividing the amount of bits to be transferred by the duration of the frame (paragraph 15, lines 8-17).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the throughput calculation method of Stolyar with the modified system of Hui and Soomro at the time of the invention. The throughput calculation method of Stolyar can be implemented in the communication network of Hui and Stolyar by dividing data length by the duration of the data transfer. The motivation to combine the throughput

calculation method of Stolyar with the communication network of Hui and Soomro is that

it provides an effective way method to calculate the data rate for the selection of the

best transmission mode in the communication network.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Kelly et al. (US 2003/0050015 A1) and Yoshida et al. (US

6,452,964 A1) are cited to show systems pertinent to applicant's invention. Kelly

discloses a method in which signal measurement is used in a two-satellite system to

achieve accurate antenna positioning. Yoshida et al. discloses an adaptive modulation

method wherein a modulation level is estimated based power level measurement of

received signals.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Farah Faroul whose telephone number is 571-270-1421.

The examiner can normally be reached on Monday - Friday 6:30 AM - 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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